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ABSTRACT

Presented is a language stimulation curriculum guide designed for severely mentally retarded institutionalized persons. Pre- and post-assessments and behavioral objectives with teaching suggestions are provided for the following curriculum areas: early motor development (such as sitting, crawling, and walking skills); adaptive skills (including visual pursuit, and reach and grasp); language socialization (such as environmental responding and self awareness); and pre-eating and feeding behaviors. (CL)

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INFANT AND INFIRM

LANGUAGE STIMULATION

PROJECT

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The Infant and Infirm Language Stimulation Project developed at the Muskegon Developmental Center with ESEA Title I funds was designed for approximately 115 institutionalized residents between the ages of four and forty years old. Major emphasis was focused upon devising a written curriculum to increase the functioning level of this severely mentally impaired population; specifically the developmental areas of physical manipulatory abilities, early language prerequisites, and self-help skills. The Project has these goals:

1. To provide the population with a program to improve their physical, language, and self-help abilities.

2. To provide initial diagnostic information and subsequent prescriptive programming for each child.

3. To provide the direct care staff with procedures for developing greater resident self-independence.

4. To provide continuing inservice programming for direct care staff and ongoing evaluations of teaching procedures.

5. To provide staff with materials to implement individualized and group motor, sensory and language stimulation.

6. To establish a model language stimulation program for families of the infant and infirm mentally impaired population.

The Language Stimulation Project is divided into four sections: Early Motor Development, Adaptive Skills, Language (Socialization), and Pre-Eating and Feeding Behaviors. In the first three sections select tasks were incorporated from a normal developmental progression and described for the target population. The total age range covered is two to eighteen months. The Pre-Eating and Feeding Behaviors section contains eleven related behaviors necessary to form an appropriate eating pattern. For the young child or infant, early work on these behaviors may facilitate the eating task in later life. Individually some of the behaviors list techniques

for improving general awareness of oral structures. This may be of importance for later speech development.

Each area contains a pre-post assessment which can be used for an initial teaching starting point, a measure of learning, or a periodic program evaluation. As a method of accountability and data keeping every child involved in the Project is administered each of the four pre-evaluations. If he does not experience any difficulty with a section, notation to that effect is recorded. For problem tasks, the appropriate step to teach the skill is implemented. The Language Stimulation Project areas are interrelated. Remedial procedures can be combined and more than one difficulty dealt with at the same time.

None of the sections, with the possible exception of Early Motor, are meant or written as final stages of development. Any child capable of advancement should be encouraged to proceed with other programs designed to teach further learning. Likewise a child having difficulty showing improvement in an area can be tested and programmed in any of the other sections. The participants in the Center's program can generally be classified as having an intellectual development ranging from 3 months through 26 months, with the majority falling in the 8 to 18 month range. Their motor development is between 2 and 24 months. Some of the residents also have significant debilitating physical deficiencies (non-ambulatory). Since many of the population are developmentally at early month levels, the Project includes procedures and activities to begin teaching skills at these months.

Sensory stimulation and environmental awareness are major ideas emphasized and integrated throughout the curriculum. To assist in developing these phases, visual, auditory, and tactile materials are used. They include floor and hanging mobiles, rattles, bells, radios,

music boxes, textured objects, floor sitters, foam contour chairs, bean bag chairs, mats, incline planes, bolsters, barrels, parallel bars, and walkers.

The Project serves as a proposed model using direct care staff as language trainers. By means of inservices with direct observations and videotape, each section is explained and the staff are provided with procedures to aid in programming. They also administer the evaluations for each section and if deficiencies are evidenced, perform the activities necessary to foster learning for an area or particular developmental task.

It is the purpose of the Language Stimulation Project to combine four developmental areas into a workable program for the infant and infirm severely mentally impaired. Some of the tasks and descriptive steps were modeled from the Gesell Developmental Scale, Program Development for Severely Retarded Institutionalized Children by McCarthy, et al, and The Portage Project by Shearer, et al. A reference section listing these and other helpful sources is located in the back.

As an aid to using the curriculum the Project areas have been color coded. They are as follows:

Introduction----------White

Early Motor Development----------Green

Adaptive Skills----------Yellow

Language (Socialization)----------Blue

Pre-Eating and Feeding Behaviors----------Salmon

References----------White

EARLY MOTOR DEVELOPMENT

The Early Motor Development section of the Infant and Infirm Language Stimulation Project is designed to teach motor and ambulatory skills. The nineteen sequential steps progress from an initial task of self-sustained head raising to independent walking.

Each task continues along a course of normal development, and is procedurally broken down to provide a method for teaching. The steps are written in a manner that follows minimum to maximum trainer assistance. In some instances due to gross physical inabilities or limb contractures, a child may not be able to complete a task. The procedures should still be performed with maximum aid, so that he may possibly develop some future compensatory response.

A pre- post test adapted from Gesell is included as an evaluatory measure. This will help in giving an initial teaching point and in noting the child's motor progress.

LANGUAGE STIMULATION PROJECT

EARLY MOTOR DEVELOPMENT
Pre-Post Test

Name: _____ Evaluation Date: _____
Birthdate: _____ Review Date: _____
Dormitory: _____

Age Level	Behavior	OBSERVATION Pre +	Pre -	Post +	Post -
1 Mo.	Supine: Rolls part way to side.				
	Prone: Lifts head momentarily.				
	Prone: Crawling movements.				
2 Mos.	Propped Sitting: Head predominantly erect.				
	Prone: Head in mid-position--can turn left or right.				
	Prone: Independently raises head when placed in a prone position.				
3 Mos.	Supine: Mid-position head symetrical posture seen.				
	Prone: Supports on forearms momentarily.				
	Able to achieve directional head and eye movement while in a supine position.				
4 Mos.	Prone: Beginning to attempt rolling.				
	Prone or Supine: Child is able to extend his arm and initiate grasping.				
	Child is able to initiate and sustain temporary head and chest raising.				
5 Mos.	Propped Sitting: No head lag.				
	Prone: Child is able to hold his head and chest up.				
	Prone or Supine: Child is able to grasp and retain an object.				
	Child is able to sit with maximum support or propped.				
	Child is able to pull to a sitting position with assistance.				
	Child is able to roll from sideline to prone or supine position.				
6 Mos.	Child rolls from supine to prone position.				
	Child rolls from prone to supine position.				

Age Level	Behavior	OBSERVATION Pre +	Pre −	Post +	Post −
7 Mos.	Sitting: Briefly leans forward.				
	Sits erect momentarily.				
	Standing: Bears large fraction of weight.				
8 Mos.	Standing: Maintains weight briefly, hands held.				
	Prone: Pivots on floor.				
	Child is able to move from sideline to sitting position.				
	Sits one (1) minute erect.				
9 Mos.	Child is able to support himself independently in a crawl position.				
	Sits: 10 minutes or more.				
	Sitting: Can lean forward and re-establish trunk in upright position.				
	Standing: Holds furniture.				
10 Mos.	Sits indefinitely, steady.				
	Sitting: Goes over to prone position.				
	Able to support weight in upright kneeling position.				
	Prone: Crawls or creeps, moves from place to place.				
	Pulls himself to feet at rail.				
11 Mos.	Standing at furniture lifts and replaces foot.				
	Furniture walks.				
	Walks: Needs two hands held.				
	Sitting: Pivots.				
12 Mos.	Walks, needs only one hand held.				
18 Mos.	Walks independently, stable balance.				

Comments:

Task 1 The child is able to independently raise his head when placed in a prone (stomach) position.

Developmental Month: 2

Procedures:

1. Place the child on his stomach with his elbows bent and forearms flat in front of him. Encourage head lifting by presenting sound devices, i.e., rattles, noise makers, verbal stimulation.

2. Place a bolster, blanket roll, or pillow under the child's chest. Encourage him to lift his head while presenting speech and sound stimulation devices. Tapping the child's forehead with the index and middle finger, tapping the back of the neck firmly with the hand, or stroking the spine firmly from the child's head downward may be of assistance in head raising.

3. Place the child flat on his stomach with his elbows bent and forearms flat in front of him. Kneel in front of the child and physically raise his head while encouraging and reinforcing him with sound stimulation.

NOTE: If the child is unable to assume a prone position due to contractures, modifications for this task can be made.

Task 2 The child is able to turn his head from a midline (center of the body) position to the right or left side while in a prone position.

Developmental Month: 2

Procedures:

1. Place the child in a prone position and encourage head turning by use of speech and sound devices. Alternate the direction of the sound and direct his head turning toward the sound.

2. Lower the child to a mat until his face touches it. This should encourage head movement to one side.

3. Lower the child to a mat until his face touches it and have another person turn the child's head to the side. Alternate the direction of his head turning and use sound stimulation devices.

Task 3 The child is able to achieve directional head and eye movement while in a supine (back) position.

Developmental Month: 3

Procedures:

1. Hold a noise making object at the midline and encourage the child to look at it using speech and sound stimulation. Move the object from side to side and encourage head and eye movement toward the sound.

2. Use a light or sound source and hold it above the child's head. Encourage eye movement in an upward and downward direction following the object.

3. Hold the object at the midline and physically direct the child's head toward the source of the sound, rewarding movement with speech stimulation and praise.

Task 4 In a prone (or supine) position the child is able to extend his arm and initiate grasping.

Developmental Month: 4

Procedures:

1. Place the child in the desired position. Hold an object within the child's visual field, moving it toward and away from him. Encourage arm and hand extension for the object.

2. Place the child in a position with his arms slightly extended in front of him. Use sound stimulation objects and encourage arm movement toward the object.

3. Place the child in a position and physically direct his extension and reaching for an object.

NOTE: The child does not have to grasp the object at this stage if he is unable, but only make an attempt at arm extension and movement. Actual grasping and retaining of objects will be developed in the next Project section.

Task 5 In a supine position, the child is able to initiate and sustain temporary head and chest raising.

Developmental Month: 4

Procedures:

1. Placing the child in a supine position, encourage him to raise his head independently using speech, light or sound sources as stimulation devices.

2. In the supine position, place the child's arms outward slightly from his body with the palms touching the floor or mat. Kneel over and straddle his body. Grasping him from behind the shoulders, gently pull his body up providing speech and sound stimulation. Return him to the mat and repeat the procedure.

NOTE: Encourage the child not to lag his head when pulled upward. You may also encourage a reaching response by holding an object in front of him while raising his head and trunk off the mat. It may be easier for some children to raise themselves if they are reaching for objects.

Task 6 In a prone position the child is able to hold his head and chest up, using elbow and forearm support.

Developmental Month: 5

Procedures:

1. Place the child in a prone position with his forearms positioned under his chest. Kneeling in front of the child and using speech and sound stimulation, encourage independent head and chest raising. Position his elbows and forearms so that his upper body is afforded maximum arm support.

2. Position the child with his forearms and elbows under his chest. Kneeling over the child physically raise him up to the forearm resting position. Repeat the procedure.

3. Position the child in the prescribed manner. Place a towel under his chest and straddle his body. Take the towel ends and pull the child to the forearm resting position. Repeat the procedure and give verbal encouragement.

NOTE: Place toys or objects in front of the child to provide visual stimulation

Task 7 The child is able to pull to a sitting position and maintain head control.

Developmental Month: 5

Procedures:

1. Place the child in a supine position with legs extended or with knees bent and feet flat on floor. Kneel and straddle his body holding your hands within his visual field. Encourage him to grasp your hands. As he retains hold of them, encourage the child to pull to a sitting position. Reward him with verbal encouragement and repeat the procedure.

2. With the child in the same supine position, kneel and straddle his body. Take his hands or arms and gently pull him to a sitting position. Reward him verbally and repeat the procedure.

3. With the child in same position, kneel behind his head. Take each of his shoulders and raise him to a sitting position, encouraging head and chest lifting.

NOTE: In these procedures it is important that the child does not lag or let his head fall backward. Encourage him verbally to keep his head up and with repetitions he should develop control.

Task 8 The child is able to sit with maximum support.

Developmental Month: 5

Procedures:

1. Pull the child to a sitting position and place his back against a support object. Situate his legs in a crossed position or bend his legs so that the foot soles come together.

   a) With the child supported maximally, place his hands palms down on the floor between his knees, or,

   b) Place his hands, palms down, on the outside of his legs, or,

   c) Place his hands, palms down, resting on his knees.

   In all instances, the child's head and trunk should be leaning forward slightly.

2. Pull the child to a sitting position. Sit on the floor with the child between your legs. Support his trunk and perform one of the hand placement procedures. Continue to reduce your amount of head and trunk support.

NOTE: For children who are unable to bend their legs, allow straight leg extension.

Task 9 The child is able to roll from a sideline to a prone position, and from a sideline to a supine position using both his left and right side.

Developmental Month: 5

Procedures:

1. Place the child in a sideline position with his knees and arms slightly flexed. His bottom arm should be flexed above his head for easier rolling. Using verbal and auditory stimulation, encourage the child to roll on his stomach. Position him in a sideline and encourage him to roll on his back.

2. From a sideline position, stimulate him to prone by tapping behind the shoulder and leg until the child rolls to the position. When the child is prone, assist him in removing his arm from under his body by tapping and stimulating him at the shoulders. To achieve a supine position, tap in front of his shoulder and leg until the child rolls on his back.

3. To roll from sideline to supine, turn the child's head in the desired direction allowing his shoulders and body to follow and assume the supine position.

4. Physically assist the child in maintaining a sideline position with his extremities flexed. Manually place his arms, legs, and head in the proper posture, and move the child into the desired position.

NOTE: In the first procedure, rolling can be facilitated if the child attempts to grasp an object as he follows it across his body.

Task 10 The child is able to roll from a supine to a prone position.

Developmental Month: 6

Procedures:

1. Place the child on his back. Encourage him to attend to a noisy object by holding it in his visual field. Move the object to the left or right side and encourage him to reach. As he attempts to reach for the object with his extended arm and raised shoulder, his body should roll over to the prone position. Allow him to retain the object.

2. With the child on his back, get him to attend to an object. Extend the object to the left or right side. As the child attempts to grasp it, stimulate his body to roll by tapping his raised hip and shoulder. His body should continue to roll to the prone position.

3. Place the child on his back. Have another person hold an object extended to one side and encourage the child to look at it. Assist the child to roll by bending his legs behind him slightly and rotating his hips. Encourage him to reach for the object, while tapping his shoulder and physically rolling his lower body over.

4. With the child on his back, kneel at his feet. Depending upon the direction you wish him to roll, place one of his legs over the other. Take his legs and gently rotate them until his hips and trunk roll over to the prone position.

NOTE: In all procedures, the child's arm should be removed from under his body by tapping at the shoulder until he pulls the arm free. If the child is able, have his arms extended over his head. This will help in rolling. If he is unable due to handicaps, place his arm, depending upon the direction of the roll, down alongside his body.

Task 11 The child is able to roll from a prone to a supine position.

Developmental Month: 6

Procedures:

1. Place the child on his stomach with his elbows bent and palms flat on the floor. Extend his arms over his head to aid in rolling. Kneel beside the child having him face away from you, and hold an object in his visual field. Move the object across his body and encourage him to reach. As he attempts to grasp the object with his extended arm and raised shoulder, the continued movement across his body should allow him to assume the supine position. Reinforce him by permitting him to retain the object.

2. Place the child prone with his elbows extended above his head, palms down, and his head facing away from you. Move an object across his body. As he attempts to grasp it, stimulate his body to roll by tapping his raised shoulder and hip. His body should continue to roll to the supine position.

3. With the child on his stomach, kneel at his feet. Have his elbows extended, palms down, and head in the direction you wish him to roll. Place one of his legs over the other, using the leg that is on the side he is facing (if facing right, place right leg over left). Take the under leg and gently rotate it until his hips, trunk, and head roll over to the supine position.

4. Place the child prone and kneel beside him with his head facing you. Lift him from under his shoulder and hip and roll him to the supine position. Use less physical assistance as the child begins to initiate some of the rolling.

NOTE: If the child is unable to extend his arm above his head, it may be placed at his side.

Task 12 The child is able to sit with minimum support.

Developmental Month: 7

Procedures:

1. Pull the child to a sitting position. Place his legs in a crossed (tailor) position with his head and trunk leaning forward slightly.

   a) Place his hands, palms down, on the floor between his knees, or,

   b) Place his hands, palms down, on the outside or his legs, or,

   c) Place his hands, palms down, resting on his knees.

2. Pull the child to a sitting position situating his legs in a crossed position and trunk leaning forward slightly. Kneel in front of the child and allow him to grab hold of your arms for stabilization (or physically place his hands on your arms). Reduce the amount of support provided.

3. Pull the child to a sitting position. Kneel behind him or sit on the floor with the child between your legs supporting him minimally. Place his hands in one of the three positions and gently push him to the right or left side. The righting response (being able to maintain a sitting posture without falling forward or sideways) will occur as the child learns to sit with minimum or no support.

Task 13 The child is able to move from a sideline to a sitting position.

Developmental Month: 8

Procedures:

1. Place the child in a sideline position with his knees and legs slightly bent. Direct him to sit up by bringing his knees up toward his trunk, at the same time pushing himself up from the sideline position with his arms on the floor. The child can maintain the side sitting position or assume the tailor sitting style. Place his hands in a position for minimum self-support.

2. Place the child in a sideline position with his knees slightly bent. Tap his legs so that they will move up toward his trunk. At the same time physically take his arms, helping him to push himself upward until his arms are straight and he is in the sideline sitting position. As he is moving into the sitting position you may assist by rotating his hips slightly toward prone. His support hands should be on the floor palms down. Place him in one of the sitting positions.

3. With the child in the sideline position and knees bent, have another person bring his knees up toward his trunk while you take his arms and push the child up. Supporting his hands, place the child in the tailor sitting position and encourage minimum support.

NOTE: This developmental task may be difficult for many children to perform independently due to limited body strength, or leg and arm contractures preventing flexibility and extension. The child should be taken through this task as far as he is capable so that strength may possibly be increased or some compensatory response may occur. Use the child's arms for pushing his body up, in addition to the left or right sideline position that appears to be easiest for the child. As the child sits with less hand support, encourage the grasping and use of toys and noise-making objects.

Task 14 The child is able to support himself independently in a crawl position (trunk and head off the floor).

Developmental Month: 9

Procedures:

1. Pull the child to a side sitting position. Using pull toys or sound objects for visual and auditory stimulation, encourage movement into the crawl position by tapping at the child's rear shoulder. The child should be able to maintain this position.

2. Pull the child to a side sitting posture. Place his hands in front of him for support and tap his hip and rear shoulder, physically helping him to rotate his body into the position. Situate his arms and legs so that they are able to support his raised head and trunk.

3. With the child in the side sitting posture and his hands in front of him for support, take your one hand and place it on his hip and the other on his shoulder. Push and lift the child to the position. To help him maintain it, hold his hips or place your arm under his raised trunk for support.

NOTE: A towel may be used as a sling to assist in raising his trunk off the floor. After the position is obtained, the sling may also help in supporting him.

Task 15 The child is able to independently support his weight in an upright kneeling position.

Developmental Month: 9

Procedures:

1. From a side sitting position, place the child in a knee sitting posture, sitting back on his legs and having his hands positioned palms down on the floor, or resting on his knees. Using a toy, encourage the child to extend and reach for it by bringing his body into an upright self-supporting posture. Reward the child, allowing him to retain the object.

2. Place the child in a knee sitting position. Using a chair or similar support apparatus, assist the child to grasp the support and pull himself upward into a kneeling position. Place the child's hands on the support so that his trunk and knees are afforded a self-sustaining position.

3. Place the child in the knee sitting position and kneel behind him. Hold the child's trunk and physically lift him up into the position. Allow him to return to knee sitting and repeat the procedure.

NOTE: For additional support in these procedures, the child may lean on the stationary object so that his forearms rest on it.

Task 16 The child is able to pull himself to standing.

Developmental Month: 11

Procedures:

1. The child is placed in or is able to assume a knee sitting position next to an immovable object. Using verbal stimulation and toys, encourage him to grab hold of the stationary object and pull himself to a standing posture. The child should be able to bring one leg from the knee sitting position and place it on the floor in front of him for support. At the same time he pulls himself to standing the support leg should assist in pushing his body upward.

2. When the child is in the upright kneeling position, stand behind him. Place his hands on a stationary object in front of him, and physically situate one of his legs on the floor for support. Assist him by lifting his body into the upright position. Maintain this stance momentarily at first with gradual time lengthening.

NOTE: It may also help in procedure two, if you apply downward pressure to the knee of his support leg as you lift him.

Task 17 The child is able to initiate furniture walking (side stepping).

Developmental Month: 11

Procedures:

1. Encourage the child to pull himself to standing using two-handed support on a piece of furniture. Place a toy or bright colored object just out of reach to the side of the child. Encourage him to reach for the object with his arm closest to the object. His body will thus be placed out of alignment, motor reflexes should respond and the child will move his trunk and lower extremities in a side-step motion to compensate.

2. Encourage the child to pull himself to standing with two-handed support on a piece of furniture. Place an object just out of reach to the side of the child. Physically manipulate the child's arm toward the object, encouraging his trunk to follow. If needed, manipulate the lower trunk and legs physically in a side-step pattern.

Task 18 The child is able to walk with support.

Developmental Month: 12

Procedures:

1. When the child is able to self-pull to standing, allow him to support himself next to a stationary object. Using a toy and verbal encouragement, persuade him to walk reciprocally (alternating feet) toward the stimulus while holding onto the support object.

2. When the child is in the self-standing posture leaning against a stationary object, position yourself in front of him. Allow the child to take hold of your hands. Slowly encourage reciprocal walking using the hand support.

3. After the child is self-standing next to a stationary object, position yourself behind him. With the aid of another person, physically move the child's legs reciprocally, supporting him at the hips and trunk.

NOTE: The use of metal walkers, canes, or tripods may assist in this task. They will provide leaning or sitting support as the child fatigues. As the child becomes confident using two-handed support, try to increase his walking distance and introduce one-handed support. Reciprocal motion can also be encouraged by taking the child's hands, gently pulling one arm ahead of the other and encouraging his legs to follow this pattern.

Task 19 The child is able to walk independently.

Developmental Month: 18

Procedures:

1. Position the child so that he is standing and leaning with his back against a support apparatus. Stand facing him and encourage him to follow as you walk backwards. Allow him to stop and reach out for support after reaching some distance.

2. Have the child standing and allow him to take hold of your hands as you face him. Slowly walk backwards and when the child begins to walk, release his hand support. If he shows signs of falling, allow him to grab hold. Repeat the procedure working for greater self-walking distances.

3. When the child is standing at a stationary object, position yourself behind him. Begin to reciprocally walk with the child, supporting his body. Gradually reduce the amount of physical support and encourage him to walk independently. Try to decrease his need for assistance and increase his amount of self-walking.

NOTE: Chairs may be used in that they are placed farther apart and the child must walk to one before he is permitted rest or support.

ADAPTIVE SKILLS

Closely related to early gross motor development is the Adaptive Skills portion of the Project. There are nineteen fine motor tasks included, ranging in progressive order from two to thirteen months.

As in the Early Motor section, each task is described procedurally to allow for minimal assistance with encouragement, or maximum aid and physical manipulation. In addition, since this area corresponds to the previous one, some of these activities can be done in conjunction with tasks in the Motor section.

The pre-post measure may aid in denoting the starting developmental task and also record learning. Some of the steps may be difficult to determine objectively. As visual, auditory, and tactile stimulation is used, subjective evaluations will have to be made.

LANGUAGE STIMULATION PROJECT

ADAPTIVE SKILLS
Pre-Post Test

Name: _____ Evaluation Date: _____
Birthdate: _____ Review Date: _____
Dormitory: _____

Age Level	Behavior	OBSERVATION Pre +	Pre −	Post +	Post −
2 Months	Child has a reflexive grasp.				
3 Months	Child is aware of his hands.				
4 Months	Explores objects and feels them.				
	Spontaneously engages his hands at midline position.				
	Arms activate at the sight of a toy.				
	Early hand to mouth pattern.				
5 Months	Retains a crude grasp of an object.				
	Visual pursuit of a lost or dropped toy.				
6 Months	Transfers an object from hand to hand.				
7 Months	Drops and retrieves an object or toy.				
	Will reach for and grasp within arm's length.				
	Uses a radial palmer grasp (thumb and tips of fingers to pick up and hold an object.)				
8 Months	Holds an object in each hand for a period of time.				
10 Months	Uses an inferior pincer grasp (thumb and index finger) to pick up a small object.				
	Spontaneously shakes a bell.				
11 Months	Empties blocks from a cup.				
12 Months	Releases blocks into a cup.				
13 Months	Holds two appropriately sized objects in one hand.				
	Can roll a ball.				

Comments:

Task 1 The child has a reflexive grasp.

Developmental Month: 2

Procedures:

1. Place your index finger in the child's palm and encourage him to close his fingers around it. You may also use a ring of bells, small toy, or a rattle.

2. If the child does not respond reflexively, physically guide his fingers into a grasp around yours momentarily. The procedure may also be done by placing objects in the child's palm and closing his grasp.

NOTE: A reflexive grasp is one in which the child will flex his hand and close his fingers around an object for a moment without purposefully grasping that object. This normally disappears around four months, with the child developing a voluntary one. If the child has a more refined advanced grasp as evidenced by results of the pre test, a reflexive grasp can not be taught. In addition an older retarded child will have some advanced motor skills and this grasp should only be of concern for the infant population.

Task 2- The child is aware of his hands.

Developmental Month: 3

Procedures:

1. Bring the child's hand up to his face so that he will see it. Move his fingers, touch his hand to his face, and turn his whole hand encouraging him to notice.

2. Place the child in positions where he can see his hands and they are free to move, i.e., over a prone roll with his arms flexed in front of him.

3. Offer the child different tactile stimulation such as warm, cold, soft, or hard to feel with his hands within his visual field.

NOTE: For tactile stimulation items such as crumpled paper, cotton, stuffed toys, textured balls, hard and cold floors, warm water, etc., can be used.

Task 3 The child will explore objects and feel them.

Developmental Month: 4

Procedures:

1. Place objects of various textures (hard, soft, smooth, rough, fuzzy, etc.) within the child's reach. Encourage him to feel them with his hands.

2. Place brightly colored objects of various shapes near the child and encourage him to feel and play with them.

3. Physically assist the child to feel the shapes, textures, etc., of the objects by taking his hands and rubbing them across the surface of the objects.

NOTE: Some objects might be carpet, a fuzzy stuffed toy, hard small rattle, soft rubber ball, ice cubes, etc.

Task 4 The child can spontaneously engage his hands at a midline position.

Developmental Month: 4

Procedures:

1. Hold a toy at the midline position and encourage the child to reach and clasp it with both hands.

2. Encourage the child to engage his hands at the midline by having him clap his hands or by playing games such as pat-a-cake.

3. Physically guide the child's hands to the midline and clasp them together for him. Repeat this several times.

Task 5 The child's arms activate at the sight of a toy.

Developmental Month: 4

Procedures:

1. Offer an object (rattle, bright colored toy, bells) within the visual field of the child. Encourage him to reach or hit the toy.

2. Place the object or toy in the child's hand and shake it, then remove it and entice the child to reach for it or indicate a response.

3. Physically touch or tickle the child with a textured object getting his attention and encouraging a response. Then hold the toy at arm's length within his visual field and encourage a physical response with his hands or arms.

NOTE: Use continuous verbalization for auditory input and to increase the child's awareness of the activity.

Task 6 The child has an early hand to mouth pattern.

Developmental Month: 4

Procedures:

1. Give the child an appropriate object such as a piece of candy, cookie, or for infants, a teething ring. The child should bring the object or edible to his mouth and explore it.

2. Move the child's arms into various positions. Approximate the hand to mouth pattern. Encourage him to play peek-a-boo or similar motor actions.

3. Physically raise and lower the child's hands to his mouth. You may also raise them to your face and then to his own. The idea is to get the child to feel the upward movement.

NOTE: This task is not designed to initiate a self-feeding program at this developmental level, nor to instill hand or finger sucking. The goal of the task is awareness of hands, facial features, and exploration.

Task 7 The child can retain a crude grasp of an object.

Developmental Month: 5

Procedures:

1. Give the child toys or objects that are easy to hold, (rattle, bells with handle, etc.). Physically assist with grasping of the object if necessary. Encourage the child to shake and look at the toy in his hand.

2. Place the toy within the child's visual field. When he indicates awareness or a desire to have the toy, assist in placing it in his hand if he doesn't initiate a grasp.

3. If the child will not retain the grasp, physically assist him and gradually decrease assistance until he will tolerate a retained grasp.

NOTE: Initially you may have to test both of the child's hands in order to determine which one will retain the object without dropping it immediately. Some children will have a preferred hand due to a physical problem or muscular weakness.

Task 8 The child has visual pursuit of a lost or dropped toy.

Developmental Month: 5

Procedures:

1. When the child is playing with a toy, he will spontaneously look for it if he drops or throws it.

2. If the child appears to have lost the dropped or thrown toy, retrieve it and gain the child's attention and visual pursuit by banging the toy and calling the child's name. Give him the toy when he looks at it.

3. Physically assist the child to spot the dropped toy by moving his head until the object is in his visual field. Offer or give him the object.

Task 9 The child is able to transfer an object from hand to hand.

Developmental Month: 6

Procedures:

1. When the child grasps a toy and holds onto it, observe if he transfers the toy from one hand to the other periodically.

2. When the child has an object in one hand, gain his attention by calling his name. Taking a toy in your hand or using a visual gesture, perform the transfer. Encourage him to transfer his toy.

3. Give the child a toy or object. As he holds it in one hand assist him in transferring it.

NOTE: It may be helpful if the child does the task at midline. In transferring the child may either bring his object hand to his free one, or perform the opposite.

Task 10 The child is able to drop and retrieve an object or toy.

Developmental Month: 7

Procedures:

1. When the child is playing and drops a toy, observe if he can retain interest and visual pursuit long enough to retrieve the toy with no assistance, provided it is within reach.

2. When the child drops or throws a toy, encourage him to pick it up again. Be certain he is looking at the toy when he retrieves it. You may have to shake the toy or indicate where it is to encourage him getting it.

3. If the child does not pick up the toy, physically guide his arm and hand to it, encouraging him to grasp it. Repeat the procedure until he will initiate retrieving.

NOTE: Use verbal and visual cues to stimulate and retain interest.

Task 11 The child will reach for and grasp within his arm's length.

Developmental Month: 7

Procedures:

1. Place a toy at the child's arm's length and encourage him to reach for and grasp it. The toy is not handed to the child.

2. Use a toy with auditory stimulation or bang it on the table to get the child attending visually. When he appears interested, gradually increase the distance between the child and the toy, encouraging the child to reach for the object. If he does not reach once the toy is away from his hands, physically assist his arm and hand, directing it toward the toy and encouraging a grasp.

NOTE: Repeat the procedures until the child will attempt reaching on his own. When sitting on the floor this may also involve leaning forward or sideways, stimulating protective and balance reflexes.

Task 12 The child uses a radial palmer grasp (thumb and tips of fingers) to pick up and hold an object.

Developmental Month: 7

Procedures:

1. Present the child an object and note if he picks it up or grasps using his fingers and thumb, rather than a gross flat handed approach.

2. Present the object within the visual field of the child. Physically assist in grasping by placing your hand over his fingers and giving pressure. Do not squeeze his whole hand as this would encourage a gross grasp.

NOTE: Items such as toast, crackers, and cookies, bells with a handle, crayons, and large pegs can be used to stimulate this hand grasp. They require a more coordinated approach than a flat grasp to handle them.

Task 13 The child holds an object in each hand for a period of time.

Developmental Month: 8

Procedures:

1. Gain the child's attention by shaking two noise makers or clapping blocks together. Encourage him to take the objects, one in each hand and perform the activity.

2. When the child is playing with or holding an object, offer him another one at midline. Observe if the child attends to the new object and attempts to take it. He should still retain the first object. The child may also transfer his original object and grasp with his preferred hand.

3. When the child is playing with a toy, offer him another object at midline. If he drops the first one and reaches for the second, repeat and assist him in retaining the original object. Help him to take the new object with his free hand. Release your assistance and note if he holds both objects. Repeat the procedure until the child loses attention and interest.

Task 14 The child uses an inferior pincer grasp (thumb and index finger) to pick up a small object.

Developmental Month: 10

Procedures:

1. Present the child small pieces of cookies, bread, dried cereal, etc. Note if he uses a pincer grasp to pick up the edibles.

2. Place a small object on the floor in front of the child. Get him to attend to the object by moving or shaking it, and encourage him to pick it up. Observe if he uses his thumb and index finger.

3. Get the child to attend to an object on the floor. As the child is looking at it, pick up the object using a pincer grasp. Place it on the floor again and have the child imitate you in picking up the object.

4. Place an object on the floor. Take the child's hand and physically assist him in picking it up using a pincer grasp. Repeat the procedure until the child shows disinterest.

Task 15 The child spontaneously shakes a bell.

Developmental Month: 10

Procedures:

1. Give the child a bell or rattle and observe if he spontaneously shakes it.

2. Present the child an object, shaking it to gain his attention. Have him take the object and encourage him to shake it. You may initially give him verbal encouragement to manipulate it and/or use a visual imitative gesture. Fade your prompts as the child independently handles the object. The sight and sound of the rattle or bell should be self-reinforcing.

3. Present the child a sound object. As he grasps it, encourage him to shake it. If he does not respond, physically take his arm or hand and move it so that sound is produced. Repeat the procedure.

Task 16 The child empties blocks from a cup.

Developmental Month: 11

Procedures:

1. Present the child some blocks in a cup and encourage him to spontaneously pick up the cup and empty it.

2. Gain the child's attention by dropping some blocks into a cup or container. As he is watching, pick up the cup and empty the blocks on the floor. Put them in the cup again and encourage the child to empty it. Repeat until he loses interest. The child should pick up the cup and turn it, not just tip the cup over.

3. Get the child's attention by calling his name and placing the blocks in a cup. Empty the blocks and replace them, giving the child a visual cue. Take his hand and assist him in picking up the cup and emptying it. Repeat for as long as possible.

Task 17 The child releases blocks into a cup.

Developmental Month: 12

Procedures:

1. Give the child some blocks and a cup, encouraging him to release them into the cup. The child should independently perform the task upon presentation of the objects.

2. Present the child some blocks and a cup or container. Give him one block and tell him to drop it in the cup, using a gesture if necessary. Repeat until all the blocks are in the cup. Later, the child can pick up the blocks from the floor by himself and perform the task. The activity should become reinforcing to the child so that he independently releases the blocks.

3. Offer the child a block. As he takes it, place his hand over the cup, encouraging him to release the block. Help him drop it if needed. Continue for all the blocks or until the child loses attention.

NOTE: To assist in releasing the block, apply pressure gently downward and backward on his hand, thus opening his fingers.

Task 18 The child can hold two appropriately sized objects in one hand.

Developmental Month: 13

Procedures:

1. Offer the child two small objects and observe if he takes both of them at the same time with one hand and holds them.

2. Gain the child's attention by calling his name and presenting three brightly colored objects, i.e. small beads, cubes, rings, bells, etc. Offer the child an object so that he will take it on his own. As he holds it offer him two more, encouraging him to take one or both of them. The child should either take one more in his object hand, or take both with his free hand.

3. Get the child's attention. Place an object in his hand and help him hold it if necessary. Give him another one, also assisting him in grasping both objects in one hand. Continue to reduce your aid and encourage him to retain the objects.

Task 19 The child can roll a ball.

Developmental Month: 13

Procedures:

1. Sit on the floor facing the child. Place a small ball between his hands getting his attention and saying "Roll the ball, John". Encourage him to release by pushing, rolling, or dropping it. Reward him with verbal praise and repeat.

2. Sit facing the child. Give him a ball and say, "Roll the ball, John". If he does not respond, help him to release the ball, describing the action. Work for less physical assistance.

NOTE: As the child develops this skill he may be encouraged to learn other more advanced fine motor tasks.

LANGUAGE (SOCIALIZATION)

Seventeen stages of language and social development comprise this area. Since socialization closely parallels language emergence in early life, the sections were combined as they relate to development in the infant mentally impaired population. The steps are included under subheadings of environmental response, initial interpersonal and self-awareness, auditory and tactile stimulation, self-awareness, receptive vocabulary, motor imitation, and verbal imitation. Developmentally the age range is two to fourteen months.

The Language (Socialization) section has two major concerns; the first being directed toward sensory stimulation. Each step emphasizes visual, auditory, and tactile input to maximize awareness. Toys and sound objects should be colorful with different textures, and be appropriate for the child's handling. As each step corresponds to the preceding one the same objects should be used repeatedly to help the child in learning their function.

Attending behavior is the other area of focus. It is developed in each of the seventeen steps to help induce and facilitate task learning. Establishing attending behavior plus presenting a visual object gives the child sensory input and follow through (feedback) as he performs an activity. Maximizing this is especially important for this population.

For some stages, giving the child physical direction may initially be necessary for the activities. Learning can later be measured as the

child independently performs the tasks. Other steps are limited to describing the use of sensory input to develop the particular stage. Evidence of learning may thereby be more difficult. The pre- post test for this section may assist in determining a child's current level of language functioning, and give an indication for further development.

LANGUAGE STIMULATION PROJECT

LANGUAGE (SOCIALIZATION)

Pre-Post Test

Name: _____ Evaluation Date: _____

Birthdate: _____ Review Date: _____

Dormitory: _____

	OBSERVATION			
	Pre		Post	
ENVIRONMENTAL RESPONSE (2-3 months)	+	-	+	-
1) Makes gross motor responses				
2) Vocalizes (cries)				
3) Visually follows stimulus				
Comments:				
INITIAL INTERPERSONAL AND SELF-AWARENESS (4-5 months)				
1) Responds motorically to attention				
2) Responds to mirror image				
3) Initiates hand play				
Comments:				
AUDITORY AND TACTILE STIMULATION (5-6 months)				
1) Responds to sound				
2) Makes specific motor or vocal response to attention				
3) Reaches for objects				
4) Grasps and retains objects				
Comments:				
SELF-AWARENESS (6-9 months)				
1) Attends to activity or object				
2) Responds to name				
3) Imitates hand clap				
4) Vocalizes and repeats own sounds				
Comments:				

	OBSERVATION			
	Pre		Post	
	+	-	+	-
RECEPTIVE VOCABULARY (11 months)				
1) Develops awareness for body parts, named objects				
Comments:				
MOTOR IMITATION (12-13 months)				
1) Imitates simple tasks				
2) Engages in appropriate play				
Comments:				
VERBAL IMITATION (14 months)				
1) Repeats simple sounds and combinations (m, n, p, b, vowels, etc.)				
Comments:				

LANGUAGE (SOCIALIZATION)

Task 1 The child responds motorically to the environment or produces an undifferentiated cry.

Developmental Age: 0-2 months.

Procedures:

1. Provide colorful mobiles, musical toys, and noisy objects in the child's room and crib.

2. Change the child's position often throughout the day, once every hour or so.

3. Change his environment by placing him in different locations with various objects.

4. If the child is crying for no apparent reason, check to see if he is in discomfort due to wetness, pins, body position, etc. If he is in no discomfort, allow him to continue crying unless a physical condition prohibits. Crying is an important part of vocalization and early language development.

Task 2 The child visually follows a stimulus.

Developmental Age: 3 months

Procedures:

1. Get the child to attend to a brightly colored object, light, or rattle. Move the object across his visual field and encourage him to follow it with head movement. Repeat this, moving the object in the opposite direction.

2. If the child does not attend, hold his head in visual line with the item. Move the child's head and object, calling his name and encouraging him to maintain eye contact. Fade your physical assistance gradually.

Task 3 The child responds motorically to attention.

Developmental Age: 4 months

Procedures:

1. When picking up, holding or talking to the child, try to get him to make some motor response. This may be any attempt at reaching, looking, or gross extremity movement.

2. Provide verbal stimulation as you attend to the child. A motor response will usually be evidenced as the child is spoken to.

3. When attending to the child if he does not attempt any movement, physically move his head or arm toward the stimulus.

4. Play games such as pat-a-cake or similar motor exercises with the child. Encourage any hand or body contact.

Task 4 The child responds or smiles to his mirror image.

Developmental Age: 4 months

Procedures:

1. Place a mirror in front of the child so that he can see his reflection. Talk to the child as he is watching himself, and reward any response that he makes.

2. Play peek-a-boo with a small hand mirror. As the child sees his image, remove the mirror for a second and then present it again. Verbalize to the child throughout the procedure.

3. Place the child on mats or incline planes in front of a floor or wall mirror. Note any motor response he makes and verbally reinforce him.

Task 5 The child begins to initiate hand play (body awareness).

Developmental Age: 5 months

Procedures:

1. Provide the child with stimulation devices such as radios, mirrors, toys, etc. Observe if he gives any pleasurable signs by hand clapping, arm shaking, etc., in response to the stimulation. Encourage his actions.

2. Provide the child with stimulation objects. If the child performs a response such as clapping hands, finger movement, or opening and closing his hands, reinforce this behavior.

3. If the child does not respond to verbalization and auditory stimulation, take his hands and move them, describing the action (hand clapping, etc.)

NOTE: Body awareness may also develop during self-care activities such as dressing and bathing. The child may notice his arms, legs, feet, etc., and begin to move them rhythmically or play with them.

Task 6 The child responds to auditory stimulation.

Developmental Age: 5 months

Procedures:

1. Present musical toys close to the child's ear and note any response toward them. He may look at them, smile, make a motor response, vocalize, or stop random activity.

2. Get the child to attend to a musical toy or to the sound of his name. Remove the object from his visual field and present both stimuli again. Note if the child turns his head toward the sound source.

3. Present sound to the child, and physically move his head in the direction of the source.

4. Clap your hands, repeat the child's name, or use a sound device out of the child's visual field. Note if the child makes a startle motor response or a vocalization.

Task 7 The child responds motorically or vocally when approached by an adult.

Developmental Age: 5 months

Procedures:

1. When approaching the child, talk to him, using his name repeatedly. Observe if he begins to turn his head and stretch his body, increase breathing, reach, and/or vocalize in a positive manner toward your voice.

2. When approaching the child, attract his attention by patting him, tickling, clapping your hands, or shaking and displaying a noisy toy.

3. Approach with a bright toy or noisy object. Hold, squeak or shake it close to your face to encourage the child to respond to you as well as to the object.

Task 8 The child reaches for an object.

Developmental Age: 6 months

Procedures:

1. Present an object using verbal and physical stimulation, shaking or tapping it to gain the child's attention. Withdraw the object from the child's grasp to encourage him to reach for it.

2. Shake a noisy object in front of the child and encourage him to reach. Physically extend the child's arm to the object and assist in his grasping if necessary.

3. Place hanging mobiles and toys, etc., over the child's bed or crib to give him an opportunity to reach for them.

Task 9 The child takes and holds objects when offered.

Developmental Age: 6 months

Procedures:

1. Present a number of toys to the child one at a time in hopes of determining which ones are favorites.

2. Present the object to the child with a great deal of verbal and physical stimulation. The object may have to be placed in the child's hand and his grasp closed.

3. Once the child has the object, help him shake it to maintain his interest and his grasp.

4. Gradually withdraw the assistance by reducing pressure on the child's hand.

Task 10 The child can attend to a specific stimulus for a short period.

Developmental Age: 6 months

Procedures:

1. Use a rattle or toy to gain the child's visual attention. Hold the object out of his reach and slowly bring it toward him as he is watching it. Give him verbal input to keep his attention while moving the object. If the child makes a reaching attempt, allow him to retain the object, rewarding his experience with verbal praise. Continue this activity until the child indicates no interest. Encourage his attending behavior as long as possible.

2. Use a squeak toy to give auditory input and gain attention. When the child is attending, place his hands on the toy, assisting him to squeeze it. Repeat this several times. Remove your hands and encourage the child to hold and squeeze the toy. If he releases or throws it, start again when you have his attention. Encourage and continue the activity as long as he visually attends and shows some interest.

3. These procedures can be used for any activity to stimulate and hold attention to a specific stimulus. Other activities may be hand clapping, exploring a toy for touch and manipulation, dumping blocks or objects from a container, or following the sound of a music box as it is moved around.

Task 11 The child responds to his own name.

Developmental Age: 7 months

Procedures:

1. When you walk into the room or approach the child, call his name. Look for a motor response, position change or some indication that he is aware you were calling him. Reinforce the response.

2. At meal time when bringing his food and approaching him, give verbal input by using his name, i.e., "Here is your food, John. Are you hungry, John?" This may also be done when dressing, bathing, giving medication, changing positions or just passing by the child.

3. During one-to-one play, reinforce any response that the child makes to his name. Hide behind him and call his name, encouraging a movement to find you. Reward him by touching him and saying his name.

4. Refer to his personal objects as belonging to him, saying his and the object's name.

5. Using a mirror, place the child in front of it, saying his name and touching him. Place a cover over his image on the mirror and say, "Where is John?" Remove the cover and repeat, "Here's John."

Task 12 The child imitates a hand clap or makes approximations.

Developmental Age: 8 months

Procedures:

1. Go through the rhyme of pat-a-cake or similar exercise to gain the child's attention. Use auditory stimulation by emphasizing the words and claps. Encourage him to clap his hands in imitation, manually assisting him if he does not respond.

2. When in a one-to-one situation, reinforce a successful experience for the child (completing a task or puzzle) by clapping. Encourage the child to clap also, manually assisting if necessary. Try to maintain the child's attention when going through the act manually, so that he will learn the response by imitation and tactile stimulation.

3. Play a game like pounding on the table or floor, and then clapping your hands. Encourage the child to imitate and assist him in the activity. The sound should be stimulating and your assistance reinforcing. Repeat the activities as long as the child will tolerate.

NOTE: Use verbal input to stimulate and encourage throughout the activities, even when using assistance.

Task 13 The child vocalizes and repeats own sounds.

Developmental Age: 9 months

Procedures:

1. To encourage vocalization or repetition of sounds, use vocalization of simple sounds to the child, music, pounding, or any action accompanied by vocalization. When the child responds with any sound, reinforce and repeat, stimulating the child to make more sound.

2. Encourage vocalization by making simple sounds close to his face or in his ear, and also giving him tactile input by touching him. Continue to repeat until some sound is heard. Reinforce the sound by repeating what he said (i.e., a, e, mama, baba, ooh, yava).

3. If the child responds to music by cooing or making a sound, hold your hand over his mouth and remove it several times creating a new sound. This may encourage the child to repeat his sound again.

4. Encourage sound or vocalization during physical activity, when bouncing him on your lap, rolling, or rocking him.

NOTE: Reinforce any sound except crying, by repeating his sound and giving some physical contact. At this stage, the child is to produce spontaneous vocal sounds rather than imitative ones, so reinforce any sounds.

Task 14 The child begins to develop an awareness for body parts and receptive vocabulary terms (during dressing and bathing).

Developmental Age: 11 months

Procedure:

1. During activities such as dressing, playing, bathing, or feeding, verbalize to the child. Describe the process being performed. Name and emphasize body parts, articles of clothing and feeding utensils. Hold the objects in the child's visual field and have him touch them. As the items and terms are named repeatedly, the child may begin to develop an awareness of them.

NOTE: This is a stage where both sensory stimulation and verbal repetition are used. It is difficult to measure if and when the child is developing this awareness.

Task 15 The child imitates simple motor tasks when given stimulation and manipulation.

Developmental Age: 12 months

Procedures:

1. Select a motor task such as putting blocks in a basket, stacking blocks, putting rings on a peg, or a piece in a puzzle. Get the child to attend by calling his name or holding an object in front of him. Perform the activity. Using verbalization and gestures, indicate to the child that he is to perform the task. If he is successful, reward him with praise and edibles.

2. If the child does not perform an imitative activity or responds only partly, assist him as much as necessary to complete the task. Repeat with the idea of offering less aid when he begins to learn the task.

NOTE: This task introduces the concept of motor imitation as an initial step for possible further language development. When the child is able to complete increasingly difficult activities, progress and learning can be measured. Used as an introductory teaching strategy, motor imitation can serve as an area for devising language programs for the retarded. Behavioral techniques such as reinforcement, successive approximation and shaping will help facilitate in the imitative process.

Task 16 The child can initiate appropriate meaningful play.

Developmental Age: 13 months

Procedures:

1. Present the child with a choice of toys and objects. If he selects one, show him how to use it appropriately and have him imitate you. Reward him for proper play.

2. If the child does not appear interested in toys, select one for him. Take his hand and place it on the toy, showing him how to use it. Assist him for short periods initially with the idea of fading your aid and allowing for independent play.

Task 17 The child imitates a sound or sound combination.

Developmental Age: 14 months

Procedure:

1. Get the child to attend by calling his name or having him track an object. Stimulate the child auditorily by repeating bilabial sounds rapidly (i.e., mamamama, babababa, papapapa). If the child makes his own vocal attempt, continue to model the sound and reward him with verbal praise and touch. Work for increased vocal sounds by the child.

2. Stimulate the child auditorily with sounds. Take his lips between your finger and form the sound on them as you produce it. Continue until the child fatigues or shows disinterest. If the child can feel the sound formed on his lips plus hear it, he may produce it himself in time.

3. If the child happens to make some random vocalizations, reinforce these attempts by repeating the sounds back to him.

NOTE: It is difficult to determine or predict if the child will be able to produce any functional sounds. The child's age, level of retardation, brain damage, or organic syndrore, may greatly limit any progress. If the child has the vocal apparatus, as evidenced by crying, sound production may be possible after concentrated and concerted efforts. A child who is capable of vocal productions may benefit from language programs designed to teach development through use of reinforcement and behavioral techniques.

PRE-EATING AND FEEDING BEHAVIORS

This Project area functions as a section for helping to teach or improve eating skills. It is included with the purpose of having the child develop an initial awareness of eating behavior requirements. Later as learning is effected, the child can assume responsibility and perform the responses more appropriately. All of the behaviors relate to one another to provide a total eating pattern. For children capable of performing the task independently, a method for self-feeding is also described.

It should be noted that to enhance learning of the behaviors the child's trunk and head remain in an upright position. His head should not be tilted backwards. If the child is a mouth breather as compared to a nose breather, some of the learning goals may have to be modified accordingly. Other important considerations are teeth alignment, gum appearance, and amount of teeth. If these are interfering with a response, additional compensations may have to be made.

The complexity of the complete eating task is broken down into workable stages. Any of the techniques that will facilitate learning in a stage can be used. A description of each behavior precedes the suggested methods. They are as follows:

Body Positioning

Lip Closure

Tongue Mobility

Tongue Thrust

Swallowing (Sucking) Response

Drooling

Chewing

Drinking

Trainer Feeding

Self-Feeding Training Procedure

Adaptive Feeding Equipment

If the child is lacking in any of the above behaviors or has difficulty performing them, the techniques can be used to strengthen that response. Due to prior conditioning and the development of a self-pattern for eating, the child may react negatively toward some exercises. Therefore, the teaching methods should be done in a limited fashion during mealtime and developed more fully between meals.

Utilization of the Pre-Eating and Feeding Behavior Checklist will indicate any problem areas, and give a starting point for the remedial procedures.

LANGUAGE STIMULATION PROJECT

PRE-EATING AND FEEDING BEHAVIOR
CHECKLIST

Name: _____ Evaluation Date: _____
Birthdate: _____ Review Date: _____
Dormitory: _____

	OBSERVATION			
	Initial		Review	
POSITIONING	+	-	+	-
1) Child sitting at table				
a) Chair at proper height with child's feet on floor.				
b) Table measures at child's midline.				
c) Child's head and trunk upright.				
d) Child uses preferred hand.				
2) Child in wheelchair using tray table.				
a) Child's head and trunk upright.				
b) Hip alignment in relation to trunk is 90°.				
c) Knee alignment in relation to lower leg is 90°.				
d) Feet placed on floor or foot pedals.				
3) Child in relaxation chair.				
a) Child's head and trunk upright.				
b) Knees at 90° angle with feet on foot supports.				
4) Child held by trainer.				
a) Child cradled in trainer's arm.				
b) Child's head and trunk in upright position.				
TEETH ALIGNMENT				
1) Able to bite on molar surface.				
Comments:				
2) Mouth closure				
Comments:				

	OBSERVATION			
	Initial		Review	
	+	-	+	-
GUM APPEARANCE				
Comments:				
AMOUNT OF TEETH				
Comments:				
LIP CLOSURE				
1) Child uses lips in removing food from spoon				
TONGUE MOBILITY				
1) Control for drinking				
2) Control for eating				
3) Tongue thrust				
Comments:				
SWALLOWING				
1) Swallowing in upright position.				
2) Mouth closed before swallowing.				
3) Tongue in mouth to retain food.				
4) Drooling				
CHEWING				
1) Child on soft or pureed diet.				
2) Child on regular diet.				
a) Able to bite food.				
b) Observable chewing movement.				
DRINKING				
1) Child has adequate lip closure to avoid spillage.				
2) Child drinks adequately.				

	OBSERVATION			
	Initial		Review	
	+	-	+	-
FEEDING				
1) Trainer feeding				
a) Child's head upright				
2) Self-feeding				
a) Finger feeds				
b) Eats with spoon				
Comments:				
c. Holds glass				
Comments:				
FEEDING AND/OR ADAPTIVE EQUIPMENT				
General Comments:				

BODY POSITIONING

Positioning for subsequent eating involves one of four body postures. In each instance, the child's abilities should be realized and the best position assumed. The ones to be described are: 1) Child sitting at table; 2) Child in wheelchair using tray table; 3) Child in relaxation chair; and 4) Child being held. Whether the child is a self-feeder or is dependent upon a trainer, one of these positions should be applicable.

If the child is contracted and on a mat, a high incline plane or bean bag chair placed behind his back should be used. It is important to try to keep his head and trunk upright.

BODY POSITIONING

Position 1: The child is sitting in a chair at a table.

Description:

1. The child is requested to sit in a chair or is placed in one. The chair should be of proper height so that his feet rest flat on the floor.
2. The table should measure approximately at the child's mid-trunk which will allow adequate upper arm movement.
3. His trunk and head should remain in an upright position.
4. He should be encouraged to use his preferred hand if he is a self-feeder.
5. The other arm may be placed in his lap or at his side.

BODY POSITIONING

Position 2: The child is in a wheelchair using a tray table.

Description:

1. A tray table is fastened onto the child's wheelchair or is placed on his lap.
2. The child's trunk and head should be upright.
3. His hip alignment in relation to his trunk should be 90° and knee alignment in relation to his lower leg should also be 90°.
4. His feet should be placed on the floor or appropriately on foot pedals.

NOTE: This position relates to a properly fitted wheelchair.

BODY POSITIONING

Position 3: The child is in a relaxation chair.

Description: 1. The child's trunk and head should be in an upright position to the degree tolerated.

2. His knees should be at a 90° angle with his feet resting on foot supports (used for wooden relaxer).

BODY POSITIONING

Position 4: The child is held by a trainer.

Description: 1. The child may be cradled in the trainer's arm, keeping his trunk and head in an upright position.

NOTE: This position should be considered temporary for feeding and should be used only if other equipment is not available. Additional feeding equipment includes a floor sitter or infant seat.

LIP CLOSURE

Adequate lip closure for eating is obtained when a substance placed in the mouth will be handled appropriately by proper lip movement. The lip action will facilitate the eating response. By use of stimulation techniques, the child will become aware of his lips and their different movements. The behaviors described include: 1) Sensory and tactile awareness of lip movement; 2) Removal of food from a spoon.

LIP CLOSURE

Behavior 1: The child is able to develop a sensory awareness of lip movement.

Techniques:

1. Stand beside or behind the child and gently hold his lips together with your fingers. Release and repeat the procedure.

2. Place a wooden tongue blade horizontally between his lips and hold his lips closed on the blade. Release and see if the child can retain it.

3. Put a small amount of peanut butter on his lips. Encourage him to remove it without using his tongue. Assist him if necessary by moving his lips with your fingers. Jelly, salt, orange juice, sugar, or citrus fruit juices may also be used.

4. If the child's mouth is normally open help him to feel mouth and lip closure by taking an ice cube and moving it around his mouth in a circular action. The sensation of coldness will assist in changing the lip posture.

5. Take a tongue blade and gently touch the areas around his mouth with the tip. The feeling of touch should alter the lip position.

6. Take your fingers and place them on the child's upper and lower lip. Move your fingers in a manner that will open and close the child's lips. Do this repeatedly.

LIP CLOSURE

Behavior 2: The child is able to use his lips in removing food from a spoon.

Techniques:

1. Observe the child as he removes food from a spoon during eating. A normal response occurs when the upper lip removes the food from the bowl of the spoon by independent movement.

2. Allow the child to place a spoonful of food in his mouth or assist him. Take your index finger and push his upper lip downward into the bowl of the spoon. This action plus taking the spoon from his mouth will remove the food. Repeat the procedure.

3. Place a tongue blade or straw in the child's mouth. His lips should close around it.

4. Put a tongue blade or straw in his mouth and position his lower and upper lip around it by holding them with your fingers. Release and repeat the procedure.

5. Place a tongue blade in the child's mouth. Take another blade and stimulate gently around the child's mouth with the blade tip. The lips should position around the blade.

6. With a tongue blade or straw in the child's mouth, take an ice cube and move it in a circular motion around his mouth. His lips should close around the object.

TONGUE MOBILITY

These suggestions are included for the purpose of developing and improving tongue mobility. It is noted in most instances that the back of the tongue is more efficient for movement than the tongue tip. Therefore, the procedures should be done from the back to the front initially, with modifications being made as required. Also, it is easier for a child to perform tongue activities inside the mouth first, and more difficult to extend and move the tongue outside the mouth. The suggestions are listed with this format. An upright body positioning and resultant head posture places the tongue in a state for facilitating active movement. If the child is supine, the force of gravity positions the tongue in more of a relaxed state. As possible, the child should be placed in an upright posture.

TONGUE MOBILITY

As chewing of solid foods may be difficult at this stage, non-chewable ones should be used. Some substances are peanut butter, ice cream, syrup, jelly, carmel, and soft cookie pieces.

Suggestions:

1. Take a wooden tongue blade and stroke the tongue surface from back to front. This may cause movement and a feeling of touch sensation.

2. Using a tongue blade, move and touch his tongue at different places inside his mouth.

3. Press a tongue blade on various locations inside his mouth. As the child develops awareness he will offer resistance against it.

4. Stroke or push his tongue on one side with a blade. The tongue will move to the opposite side and back again. Repeat for the other side.

5. Place some honey on the end of a tongue blade or cotton cue tip. Touch his tongue at different places inside his mouth. His tongue may attempt to remove the sweet substance.

6. Place a substance on the inside of the child's molar teeth or cheek. The child should use the side or tip of his tongue to retrieve it.

7. Place a substance on the upper inside gum ridge. The child should lick it off with his tongue tip. Repeat for the lower gum ridge.

8. Place a substance between the child's upper lip and teeth. Movement of the tongue tip should remove it.

9. Place a substance between the lower lip and teeth. The tongue tip should remove it.

10. Place a substance on the outside of the upper lip, lower lip, and at the corners. The child should lick the food with his tongue.

11. Place a substance on the upper inside gum ridge. Gently hold the child's chin down and encourage him to remove the food by the use of only his tongue.

12. Hold a sucker or ice cream on a tongue blade in front of the child's mouth. Encourage him to extend his tongue and remove it.

TONGUE THRUST

This is observed as an outward movement of the tongue during eating or swallowing that prevents food from being retained in the mouth. If the mouth is kept closed during eating and drinking, the tongue will learn to move upward and stay behind the teeth during the swallow, thus keeping the food in the mouth. As the tongue assumes a proper position, upper lip action will assist in the eating process. An adequate swallowing response or absence of tongue thrust will generally be observed when the teeth are together during swallowing, the tongue is against the upper teeth ridge, the lips are closed, and rear throat muscle movement is evidenced. Some factors pertain to the elimination of tongue thrust:

Experiment with the consistency of the food. Some children show less thrust or pushing out of the food if a thicker substance is used rather than a pureed.

Give small spoonfuls of food. Larger amounts are not handled as easily, in that the tongue pushes the extra food out of the mouth. More appropriate sucking and chewing movements will occur with less amounts.

Try to keep the child's head in an upright position. When the head is tilted back, it is easier for the tongue to push food out of the mouth.

When the food is placed in the mouth, give a slight downward pressure on the tongue with the spoon before removing it. This will help reduce the tendency of the tongue to push out of the mouth, and will encourage upper lip activity.

A general guideline for feeding a child with tongue thrust is to initially place food at the corners of the mouth by the molars, and to rotate his lower jaw to assist in chewing. As the thrust decreases, food may be placed in a more frontal mid position in the mouth.

SWALLOWING (SUCKING) RESPONSE

Swallowing serves as part of the sequence observed in the eating task. Improvement in this behavior will increase strength in the lips, tongue, and jaw as well as eliminate drooling. Most importantly adequate eating of solids and liquids will be accomplished. The response should occur normally as a substance is introduced into the mouth, and therefore techniques to facilitate this task voluntarily are limited. Likewise, some children may not require assistance in this area.

Sucking is included with swallowing, the purpose also being to strengthen the lips and tongue. In working with both behaviors the child's mouth should be closed before the response begins, and his head should be upright to oppose the force of gravity. The following ideas may help in improving these behaviors.

SWALLOWING (SUCKING) RESPONSE

As indicated by the child and his level of progress in the eating process, chewable or non-chewable foods are used. If a regular diet is used some chewing is required.

Suggestions:

1. Place food in the front of the child's mouth and note the resultant action. If necessary, gently hold his lips together and stroke his neck from the throat upward and foreward toward his chin. This will create a swallow.

2. Hold a spoonful of food in front of the child's mouth. Note if he performs a sucking or swallowing response involuntarily. Reward him with the food.

3. For sucking, press his tongue from underneath to the upper gum ridge. He should feel the sensation and perform the response involuntarily.

4. Using a straw or plastic tube, place your finger over one end, holding a liquid. Keep the straw below horizontal so that the liquid is not free floating. Place it in the child's mouth where a sucking action will draw the fluid into his mouth.

5. Touch the child's lips in front of his tongue when his mouth is closed. A reflexive sucking action may result.

DROOLING

Drooling is the result of a number of problems, the major being a lack of muscle control for the effective swallowing of saliva. The child with poor eating and drinking habits usually has related drooling difficulties. Some factors are often interrelated with drooling; poor swallowing and sucking, lack of head control, jaw instability and mouth opening, and mouth breathing with a lack of awareness for closing the mouth and swallowing. These considerations can be dealt with to control drooling. If they are reduced, the improved head, jaw, lip, tongue, and swallowing movements will result in less drooling. A description of these considerations follows. As drooling control (swallowing effectively) should normally be an involuntary cognitive function, some improvement may only be effective with higher level children, where they can be reminded to swallow.

DROOLING

Considerations:

1. Jaw control--If a child can be reminded to maintain and be aware of mouth closure during activity, it will lessen drooling. The pressure cues of saliva building up in the mouth will encourage swallowing more readily.

2. Head Control or Stability--This has an effect because it stabilizes the functions affecting drooling. When the head lags or is not controlled, the mouth is forced open and swallowing is not easily accomplished. As head control is improved, drooling will be lessened.

3. Lip Closure, Tongue Mobility, and Tongue Thrust--Techniques improving these areas will show a decrease in drooling. Refer to the sections describing these behaviors.

4. Straw Drinking (Sucking)--Using a plastic tube initially, this is a method to reduce drooling by improving lip closure, tongue thrust, and swallowing control. (This can be observed in cerebral palsied children having difficulty in drinking from a glass or cup.)

NOTE: There are neuromuscular facilitation techniques (brushing, icing, etc.) used to improve sensory awareness and control for drooling. Therapists and people interested in these procedures should refer to other sources for their implementation.

Chewing is defined as an opening and closing movement, together with a sideward movement that slides the upper and lower teeth across each other. A bite reflex precedes chewing and is the immediate biting on anything introduced into the mouth. This should be modified around the fourth month with the chewing reflex beginning several months later. Stimulating the chewing action will assist in eliminating the bite reflex.

Many children who are severely retarded may not be developmentally ready for chewing even though they have developed teeth and other physical skills. If a child is functioning below the six to eight month level of mental development, he may never learn to chew properly; and a chewing program may be unrealistic. Muscle and motor control, gum, teeth or alignment problems, and other learned habits also have an effect on learning how to chew.

If the child is capable of being introduced to a chewing program a few points should be discussed. The child needs to be able to handle lumpy or solid foods as a prerequisite for chewing. Second, training should be done when the child is hungriest at the beginning of a meal or between meals. And third, to teach chewing requires patience and practice to make the skill pleasant and reinforcing for the child. The following are suggestions to teach chewing.

CHEWING

Suggestions:

1. Put a small piece of food between the molars, and move the child's lower jaw up and down. Place the food to the side of the mouth, not the center. Switch sides when you place the food so he doesn't become accustomed to chewing on just one side.

2. If the child forces the food out with his tongue, move the food farther to the side of his molars.

3. Give the child bite-sized pieces to start chewing. Toast, graham crackers, and cookies can be used. The child can feel and hear the crunchy sound when he chews, as well as learn how to bite off pieces of food.

4. Introduce lumpy foods gradually. It may be harder for the older child to tolerate them if he has definite likes and dislikes.

5. Help the child be aware of his mouth, tongue and teeth. Play games pointing to these parts of his face by yawning, blowing, and moving his tongue to touch his upper lip, chin, and cheek.

DRINKING

The following techniques can be used with children who do not take liquids well, or for those who cannot tolerate drinking from a glass. Lip closure and tongue control should be observed and if difficulties in these areas are noted, refer to the sections describing these techniques.

DRINKING

Suggestions:

1. Observe the child as he drinks. Normal or adequate lip positioning is evidenced if the child has the glass on his lower lip in front of his teeth, and holds it with his upper lip using a narrow mouth opening.

2. Use a thickened substance to work on drinking. This will flow easier and give the child more time to swallow. Examples are strained fruit, pudding, or custard diluted with juice, milk or water.

3. Liquid can be given by the spoonful when initially using the thickened substance. When he tolerates the substance, introduce the use of a cup.

4. When first starting with a cup, do not let the child get too much liquid. This may frighten and give him an initial unpleasant experience.

5. Gradually thin the substance as the child tolerates it, until the liquid reaches normal consistency.

6. Hold the glass of liquid for the child while placing it on his lower lip.

7. Difficulty with lip closure or tongue thrust can be assisted by using a paper cup and cutting a semi-circle on the side that enters the mouth. This enables the upper and lower lip to come together more readily and will eliminate losing large amounts of liquid out of the sides of the mouth.

8. There are commercial glasses and cups that can be used which limit the amount of liquid flow. These can be used with the trainer initially holding the cup and assisting the child with positioning of his lips and tipping of the glass.

9. A regular plastic glass can also be used. Start with the glass half filled with liquid. Stand behind the child and position the glass at his lips for drinking. A bib or towel held in one hand is a help in eliminating spilling and also to give slight pressure downward on the child's chin. This stimulates lip closure. The other hand controls the glass and amount of liquid flow. Do not apply pressure against the back of the neck or head. Use your body to prevent the child from throwing his head back by standing close to him and supporting his head and shoulders.

TRAINER FEEDING

The method used to feed severely retarded children is important in that it may reinforce or inhibit the behavior patterns necessary for the child to learn independant feeding. Some points should be taken into account:

1. Whenever possible, the feeding should be done from the child's front so that his eating behavior can be observed.
2. The child should be in as close to an upright position as possible to place more responsibility upon the child for the eating response.
3. In most instances, the food should be presented to the child from the tip of the spoon to the front of his mouth. It should be in small amounts so that the tongue can manipulate it to the back of the mouth for swallowing or to the teeth for chewing.
4. Some children, especially those with Down's Syndrome or cerebral palsy, have an enlarged tongue with poor movement ability. Exercises and techniques to improve tongue mobility may be required.
5. When food is introduced into the front of the mouth, the tongue of some children may have the tendency to force it out. It may be helpful to place the food farther back and to the side of the mouth, so the tongue can more easily handle the swallowing or chewing.

6. A child may not have enough lip control or ability to remove food from a spoon. The trainer may assist by pushing the child's upper lip into the spoon bowl as he withdraws the spoon. As the child learns adequate food removal, his own lip action will complete the process.

Drinking, as it applies to trainer assistance, is similar to the description provided in the Pre-Eating section.

SELF-FEEDING TRAINING PROCEDURE

Back-chaining with fading of physical assistance is the procedure used for teaching this skill. It serves the purpose of providing a training method for direct care staff or parents to use in initiating self-feeding behavior.

Back-chaining is a training method in which a behavior is broken down into small successive steps. The response that is closest to the completed task is rewarded first. The order of response and reward is reversed until the entire sequence is learned. As an example, in self-feeding the first response to be reinforced is that of placing the spoon and food in the mouth independently. Training is done in reversed order until the final response of picking up and loading the spoon is accomplished and the complete task is performed by the individual.

A few points must be considered in a self-feeding program. Each child should be evaluated for existing physical handicaps prior to beginning the task. If a physical handicap inhibits the learning procedure, compensatory responses need to be taught and equipment adapted to aid in the learning of this skill.

In the area of adaptive equipment, a built-up, swivel, or taped spoon should be considered to aid and compensate for a manual handicap. Plate holders, table and chair size should also be considered. For further information refer to the Adaptive Equipment section.

Most beginning self-feeders should be on a chopped diet. This is an aid in training the spoon loading process, as the food is easier to load and affords less frustration to the individual.

Musculature problems are noted in many of the infirm population. Some of these are lack of tongue mobility, poor lip closure, and little or no mastication (chewing). Procedures for correcting these problems can be referred to in the corresponding sections.

Behavior problems may be encountered due to new demands placed upon the child. It has been found helpful to use a short term time out from reinforcement (food). The food is removed from the individual's visual field for a few seconds or until the inappropriate behavior ceases, whichever occurs first.

The five areas of the complete training procedure to be described are as follows:

1. Complete physical assistance by trainer through entire procedure.
2. Physical assistance at individual's wrist.
3. Physical assistance at individual's forearm.
4. Physical assistance at individual's elbow.
5. Non-direct physical assistance.

SELF-FEEDING

Procedure 1: Complete assistance by the trainer through the entire procedure. The trainer's hand is completely over the resident's hand to aid and maintain his grasp on the spoon.

Description:

1. Assist the child in picking up the spoon from the table and loading it with food. Move with the child until his hand and yours is directly in front of his mouth.

2. Release your assistance and allow him to complete the task by placing the spoon and food in his mouth.

3. When the above is learned, release your physical assistance at a mid-way point from the plate to his mouth and then the total distance from plate to mouth.

NOTE: Any grasp that is functional is acceptable. If there is a problem of poor muscle control, the grasp that works best is that of a fisted hand over a spoon handle with the thumb underneath the spoon handle and over the fingers.

Procedure 2: Assistance at the child's wrist. The trainer moves his manual assistance from the child's hand to his wrist.

Description:

1. Support the child's wrist in order that it remains pronated (flat and palm down) and the spoon maintains a level position.

2. Release your assistance at his wrist at a halfway point from the plate to his mouth.

3. Finally, assist at his wrist only in loading and allow the child to make the complete move from plate to mouth.

Procedure 3: Trainer assistance at the child's forearm. The trainer moves his manual assistance from the child's wrist to his forearm.

Description:

1. Support the child's forearm making sure his wrist is flat and pronated. His elbow should bend freely and be raised slightly off the table if possible.

2. Release your assistance at mid-way point from the plate to his mouth, being sure that his hand, wrist, and arm maintain a good position.

3. Release your assistance at a point where the child must move from the plate to his mouth independently and in good form.

Procedure 4: Trainer assistance at the child's elbow. The trainer moves his assistance from the child's forearm to his elbow.

Description:

1. Place your hand over the child's elbow. His elbow should be flexed, and moving freely, not resting on the table.

2. Release your assistance at a mid-way point from the plate to the child's mouth, allowing the child to independently complete the task.

3. Release your elbow assistance completely after the above step is learned, allowing the child to now independently feed himself.

NOTE: In this procedure, the child must perform almost independently as the trainer offers little assistance. The trainer should be able to observe independent movement on the part of the child, including the loading process. Slight pressure may be applied occasionally to stimulate or motivate the child to perform the task.

Procedure 5: Non-direct physical assistance. This procedure is used if the child becomes dependent upon the trainer's touch to perform the task, even though he is capable of independent performance.

Description: The trainer removes his direct physical contact with the child and merely taps the child occasionally at the wrist or elbow. This should stimulate the response of independent movement so that the child performs the feeding task.

NOTE: The elimination of assistance in the training sequence may take time to accomplish, especially if the child has become dependent upon physical guidance. Removing his meal for a short period (time-out from reinforcement of food) may aid in this procedure.

ADAPTIVE EQUIPMENT

The following is a list of equipment items, descriptions, and purposes for feeding or self-feeding programs. They have been found to aid eating methods for handicapped and mentally retarded persons.

1. Gerber feeding spoon: short handled with rounded bowl.

   a. This can be used as a spoon for beginning self-feeders.

   b. It can also be used for the older child who is still on a pureed or junior diet, but can tolerate larger amounts of food at a time and has to be fed.

   c. The handle can be built up to facilitate grasping by using foam rubber or wrapping tape around it.

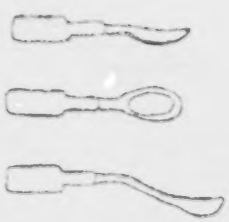
2. Baby spoon: long handled with small narrow bowl.

   a. It can be used for feeding infants or difficult feeders, those who don't have lip closure or good tongue control.

   b. It avoids over amounts which are only pushed back out of the mouth by a tongue thrust of inadequate lip closure.

3. Build up utensils: light weight with large plastic handles. They can be used with either the left or right hand, and can be bent to get the best feeding pattern.

NOTE: They come with long necks and handles and can be used for those who have a limited range of movements in their arms and wrists.



4. Utensil holder: elastic utensil holder which has a plastic pouch and velcro closure.

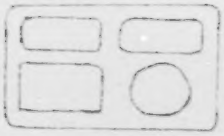
   a. It is used for those who cannot hold onto a spoon, or for those who will not grasp due to a behavior response rather than a handicap.

5. Regular teaspoon:

   a. It may be built-up, with tape to enhance grasping.

   b. The neck of the spoon can be bent at an angle which facilitates loading, and getting food to the mouth without losing it.

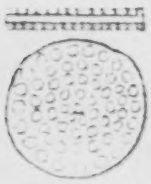
6. Sectioned plate: a plate which has separate sections to hold food.



7. Food guard: clamps to plate with a spring action to aid a person in self-feeding with loading his spoon.

8. Frame with suction cups to fit sectioned plate: holds plate down to aid messy eaters, plate throwers, or those self-feeding who have poor muscle control.

9. Suction holder: small suction cups on each side of a soft rubber base which provides a double acting grip to anchor dishes and plates.



10. Even-flo vacuum cup: made for drinking when a person is lying down or with a child who takes liquids with difficulty. Enough for one swallow will come out when the cup is tipped up.

11. Spill proof or Tippy cup with top or training lid and a weighted base.

    a. It can be used to start children on cup or glass drinking; or it works for those who have difficulty taking liquids due to inadequate lip closure and control.

12. Paper or styrafoam cup cut out:

    a. It is designed for cerebral palsied children or those not taking liquids well. A paper cup cut out at the bottom lip area will facilitate taking liquids in a less messy manner. It aids with poor lip control, tongue thrust and biting because the cup bottom fits the shape of the mouth for drinking.

    b. A small paper cup can be pinched with the finger tips to aid in getting liquids into the mouth when there is no lip or mouth closure; it is less messy and aids control of the amount of liquid.

REFERENCES SOURCES AND EQUIPMENT

The following is a list of language programs, books, and materials which may be of assistence in working with the infant and infirm population.

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Shearer, David, et al. Portage Guide to Early Education. Instructions and Checklist. Experimental Edition. Portage, Wisconsin, 1973.

Equipment

Childcraft Education Corp.
Distribution Center--52 Hook Road
Bayonne, New Jersey 07002

Cleo Living Aids
Division of Heyl
3957 Mayfield Road
Cleveland, Ohio 44121

Fred Sammons, Inc.
Box 32
Brookfield, Illinois 60513

J. A. Preston Corp.
71 Fifth Avenue
New York, New York 10003

Skill Development Equipment Co.
1340 North Jefferson
Anaheim, California 92807